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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
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08/581,347 12/29/95 CLEEVES

J 16820.P121

EXAMINER

HM12/1019
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ART UNIT 13 PAPER NUMBER

1641

DATE MAILED:

10/19/99

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 3/22/99

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-21 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☒ Claim(s) 1-21 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.
☐ received in Application No. (Series Code/Serial Number) _____
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

—SEE OFFICE ACTION ON THE FOLLOWING PAGES—

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DETAILED ACTION

The finality of the previous Office Action has been withdrawn. This new Non-Final Office Action is hereby set forth and a shortened statutory period for response is set to expire 3 months from the mailing date of this Action.

The text of those sections of U.S. Code not included in this Office Action can be found in a prior Office Action.

The Examiner acknowledges receipt of the After Final amendment filed March 22, 1999.

In this application:

Claims 1-20 are now pending and under examination.

Drawings

The drawings are objected to under 37 CFR 1.84 or 1.152 for the reasons stated on PTO 948. Correction is required.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show #512 in Figure 5 as described in the specification. Although Figure 4C shows #512, this number is indicated to represent a holding body.

The drawings also fail to show #290 representing a claim. The specification at page 7, line 10 indicates #222 to be a

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portion of #290 (clamp); however, the drawings show #222 to be a portion of #220 (heat transferring seal).

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Correction is required.

Claim Rejections - 35 USC § 112

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 6, 7, 10, 11, 14, 18 and 19 recite the term "substantially" (e.g., "substantially airtight adhering" or "substantially concentrically" or "substantially conforming"). The term "substantially" is broad and it is unclear what Applicant intends by these limitations.

Claim 3 is indefinite in the recitation of "heat transferring volume". It is not clear what Applicant and the term is not further defined in the specification.

Claim 14 is indefinite in the recitation of "heat transferring seal comprising a heat transferring seal". Furthermore, line 7 of the claim also recites "heat transferring

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seal" and it is not clear to which "heat transferring seal"
Applicant is referring.

Claim Rejections

35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Cathey, Jr.

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Cathey, Jr (US Patent #5,096,536) disclose an apparatus for plasma etching comprised of an upper and lower electrode, clamps, o-ring sealing members, and central opening in the lower supporting electrode. (See especially column 4, lines 16-51)

Cathey, Jr used a o-ring seal in order to improve the heat transfer between wafers being etched and the metal electrodes supporting the wafers. (See especially column 2, lines 62-68) Poor heat transfer pockets prevent good wafer cooling and thereby produces photoresist patterns on wafers.

Therefore, the prior art disclosure is viewed as anticipating the claimed invention.

If Applicant maintains that the o-ring seal taught by Cathey, Jr would not possess a thermal conductivity that would produce a "substantially uniform" heat transfer between the holding body and the substrate, the following rejection is set forth:

Claims 1-4, 14 and 15 are rejected under 35 U.S.C. 103 as being obvious by Cathey, Jr in view of Kirchner et al.

The teachings of Cathey, Jr were set forth above. Cathey, Jr teaches the desirability of using an o-ring to improve the heat transfer between the wafer and metal electrode. However, the reference does not teach the Kapton o-ring.

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Kirchner et al (US Patent #5,811,820) teach the heat transferring properties of Kapton. (See especially column 22, lines 5-7)

Given the teachings of the prior art that Kapton has "efficient" heat transfer properties, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Kapton as the o-ring seal in a method of improving the heat transfer between the wafer and the metal electrode.

Claims 5-13, 16-20 are rejected under 35 U.S.C. 103 as being obvious by Cathey, Jr in view of Kirchner et al and further in view of Velbeck et al.

The teachings of Cathey, Jr in view of Kirchner et al were set forth above. The teachings of the combined references would suggest and provide motivation for using Kapton as the o-ring seal in an apparatus for improving the heat transfer between a wafer and a metal electrode as Cathey, Jr suggest the use of any o-ring and Kirchner et al teaches the efficient heat transfer properties of Kapton. However, the references do not teach an adhesive heat transferring seal.

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Velbeck et al (US Patent #5,177,363) teach an adhesive Kapton product which allows heat sealing of the Kapton to the surface of the metal structure.

Given the teachings of the prior art that Kapton is adhesive, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Kapton in the apparatus for improving the heat transfer between the wafer and the metal electrode for the expected benefit of heat sealing the Kapton to the surface of the metal structure.

The Group and/or Art Unit location of your application in the Patent and Trademark Office may have changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1641.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Ryan whose telephone number is (703)305-6558.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-0196.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027.

Papers related to this application may be submitted to the Group 1600 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The fax number for Art Unit 1641 is (703)308-4242.

V. Ryan
Patent Examiner/Art Unit 1641
October 1999
Ryan/vr

Christopher L. Chin
CHRISTOPHER L. CHIN
PRIMARY EXAMINER
GROUP 1600-1641